

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-10 (Canceled)

Claim 11 (New): A continuously operated process for the purification by distillation of an oxirane formed in an oxirane synthesis by reaction of a hydroperoxide with an organic compound, wherein the crude oxirane is separated in a dividing wall column into low-, intermediate- and high-boiling fractions and the oxirane is taken off as intermediate boiler at the side offtake.

Claim 12 (New): The process as claimed in claim 11, wherein the dividing wall column is configured as thermally coupled columns.

Claim 13 (New): The process as claimed in claim 11, wherein the dividing wall column has from 30 to 120 theoretical plates.

Claim 14 (New): The process as claimed in claim 11, wherein the distillation is carried out at a temperature from 35 to 110°C and a pressure from 1 to 10 bar, with the temperature being measured at the side offtake and the pressure being measured at the top of the column.

Claim 15 (New): The process as claimed in claim 11, wherein no impurity is present in the oxirane in a concentration of above 0.1 % by weight, or the sum of all impurities is not greater than 0.1 % by weight.

Claim 16 (New): The process as claimed in claim 11, wherein the oxirane is prepared by a process comprising at least the steps (i) to (iii):

- (i) reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,
- (ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),
- (iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound.

Claim 17 (New): The process as claimed in claim 16, wherein an isothermal fixed-bed reactor is used in step (i), an adiabatic fixed-bed reactor is used in step (iii) and a separation apparatus is used in step (ii).

Claim 18 (New): The process as claimed in claim 11, wherein the hydroperoxide used, is hydrogen peroxide, and the organic compound used, is propylene, and the reaction occurs over a heterogeneous catalyst to form propylene oxide as oxirane.

Claim 19 (New): The process as claimed in claim 18, wherein the heterogeneous catalyst used is the zeolite TS-1.

Claim 20 (New): A continuously operated process for the purification by distillation of an oxirane formed in an oxirane synthesis by reaction of a hydroperoxide with an organic compound, wherein the crude oxirane is separated in a dividing wall column into low-, intermediate- and high-boiling fractions, and the oxirane is taken off as intermediate boiler at

the side offtake, wherein the dividing wall column has from 30 to 120 theoretical plates, and wherein the distillation is carried out at a temperature from 35 to 110°C and a pressure from 1 to 10 bar, with the temperature being measured at the side offtake and the pressure being measured at the top of the column.

Claim 21 (New): The process as claimed in claim 20, wherein no impurity is present in the oxirane in a concentration of above 0.1 % by weight, or the sum of all impurities is not greater than 0.1% by weight.

Claim 22 (New): The process as claimed in claim 20, wherein the dividing wall column is configured as thermally coupled columns.

Claim 23 (New): The process as claimed in claim 20, wherein the oxirane is prepared by a process comprising at least the steps (i) to (iii):

- (i) reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,
- (ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),
- (iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound,

wherein an isothermal fixed-bed reactor is used in step (i), an adiabatic fixed-bed reactor is used in step (iii) and a separation apparatus is used in step (ii), and wherein the hydroperoxide used, is hydrogen peroxide, and the organic compound used, is propylene, and

the reaction occurs over a heterogeneous catalyst to form propylene oxide as oxirane, wherein the heterogeneous catalyst used, is the zeolite TS-1.

Claim 24 (New): The process as claimed in claim 23, wherein no impurity is present in the oxirane in a concentration of above 0.1 % by weight, or the sum of all impurities is not greater than 0.1 % by weight.

Claim 25 (New): The process as claimed in claim 23, wherein the dividing wall column is configured as thermally coupled columns.

Claim 26 (New): The process as claimed in claim 23, wherein the dividing wall column is configured as thermally coupled columns, and wherein no impurity is present in the oxirane in a concentration of above 0.1 % by weight, or the sum of all impurities is not greater than 0.1 % by weight.

Claim 27 (New): An apparatus for carrying out a continuously operated process for the purification by distillation of an oxirane formed in an oxirane synthesis by reaction of a hydroperoxide with an organic compound, which comprises at least one isothermal reactor and one adiabatic reactor as well as a separation apparatus for preparing the oxirane, as defined in claim 17, and a dividing wall column for purifying the oxirane by distillation.

Claim 28 (New): The apparatus as claimed in claim 27, wherein the dividing wall column has from 30 to 120 theoretical plates.

Claim 29 (New): The apparatus as claimed in claim 27, wherein the dividing wall column is configured as thermally coupled columns.